UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,250	10/12/2001	Takuhito Ueno	110863	8843

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ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	09/975,250	UENO ET AL.
	Examiner	**Art Unit**	
	Lucas Divine	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2005*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Claims 1 – 15 are pending.

2.   Previous objections withdrawn due to adequate remarks and amendments.

Response to Arguments

3.   Applicant's arguments filed 9/16/05 have been fully considered but they are not

persuasive.

With respect to applicants assertions as to the Interview dated 8/30/05 and the new

limitations.

In reply and to clarify, the cited new limitations that applicant says are not taught in

Nakazato were not specifically discussed in the Interview, i.e. the proposed amendment

discussed did not have either of these amendments in them. Thus, to clarify, Examiner agrees

that it was indicated by the Office in the Interview that Nakazato does not have much discussion

of the type of control information between the host and printer controlling section.   Examiner

suggested being more specific with the details of the communication control information and

how it works as described in applicant's specification. The current amendment to claim 1 is not

specific enough to overcome the current 102(b) rejection under Nakazato because Nakazato

teaches wherein the communication control information indicates a type of response to be made

to the received data (the commands indicate what the printer is supposed to do [how it should

respond], and thus print data control information from the driver indicates a printing type

response to be made to the received data, as well as a warm up type control information from the

driver indicates the printer should warm up based on the received data – so the command

analyzing section determines how to respond based on the type of command) <u>received from the</u>

<u>host computer</u> (the setting portion 10 including the printer driver 11 are what sends the

commands and thus communication control information to the printer). The current amendment

to claim 14 does not further limit the claim. Since the wording 'at least one of' is included, and

in the first rejection it was set forth that Nakazato teaches the first option of the 'at least one of',

the rejection still stands because 'at least one of' the options is taught by the prior art.   Again,

Examiner asserts that the new amendments argued by applicant were not specifically discussed

during the Interview or presented to Examiner in any proposed amendment for Examiner to

comment specifically on. If applicant wishes a copy of the proposed claims discussed, one can

be supplied.

Claim Objections

4.   Claim 13 is objected to because of the following informalities: the claim reads 'the

communication control information includes …'. This leads Examiner to look back at the parent

claim 9 and ask 'what communication control information?' Thus, it is unclear whether claim 13

is actually adding a new type of element called communication control information to claim 9 or

if claim 13 was originally meant to depend from claim 12, which properly introduces

communication control information. Examiner will assume the former, that a new element is

added at is communication control information.

5.   Claim 10 is objected to because of the following informalities: claim 10 states 'the

receiving portion in the shift'. Examiner asks, how is the receiving portion in the shift? If

applicant means the storing is done in the shift, clearer claim wording is required. Appropriate

correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claims 1 and 9 – 13 are rejected under 35 U.S.C. 102(b) as being anticipated by

Nakazato et al. (US 6094546) hereafter as Nakazato.

Regarding claim 1, Nakazato teaches **a printing system (Fig. 1) comprising:**

a printing portion (Fig. 1, printer engine 30),

a controlling portion for controlling said printing portion (Fig. 1 printer controlling

section 27),

a power saving mode (Fig. 6 shows printer states, including power saving state) **for**

stopping a supply of a power source to at least said controlling portion (col. 9 lines 13-19

teach that all of the functions of printer controlling section 20 and printer engine 30 are disabled

[which includes printer controlling section 27] except logic functions for receiving commands

[ref. no. 22]),

a deciding portion (inherent to the printer due to its ability to shift into power-saving state during idle time; Fig. 6, col. 1 lines 6-7 and 62-62) **for deciding a shift from a normal mode to the power saving mode** (idle mode to power-saving state, Fig. 6);

a setting portion (Fig. 1 host computer 10) **for setting communication control information** (host computer 10 includes printer driver 11 that sets all communication control information that communicates control information to the printer) **used in the shift from the power saving mode to the normal mode after the shift to the power saving mode is decided by said deciding portion** (warm-up command information is set and communicated to printer, Fig. 2 S7 – by section 15 part of 11 part of 10, which is the setting portion); **and**

a receiving portion (Fig. 1 command analyzing section 22) **for receiving data based on the communication control information set by said setting portion** (receives command information communicated by the host computer 10) **without using said controlling portion** (command analyzing section does not use controlling portion 27 in the warm up command, the command is analyzed in 22 and then the warm up is transmitted to temperature controlling section 25 for starting the warm up) **in the shift from the power saving mode to the normal mode of the controlling portion** (warm-up command from host, so during the shift, if print data is received, it takes the step from S2 to S8);

wherein the communication control information indicates a type of response to be made to the received data (the commands indicate what the printer is supposed to do [how it should respond], and thus print data control information from the driver indicates a printing type response to be made to the received data, as well as a warm up type control information from the driver indicates the printer should warm up based on the received data – so the command

analyzing section determines how to respond based on the type of command) **received from the host computer** (the setting portion 10 including the printer driver 11 are what sends the commands and thus communication control information to the printer).

Regarding claims 9 and 12, all of the structural elements of claim 9 are included in claim 1. Therefore, the limitations are met by Nakazato as discussed above.

Regarding claim 10, which depends from claim 9, Nakazato teaches **a storing portion for storing data received by the receiving portion in the shift** (memory 26 stores the data received in the shift, S8 of Fig. 3).

Regarding claim 11, which depends from claim 9, Nakazato teaches **a data received by the receiving portion from the external of the printing system is a data which the printing portion prints after the shift** (received printing data, S8, e.g. col. 4 lines 65-67).

Regarding claim 13, which currently depends from claim 9, Nakazato teaches at least one of the list, thus reads on the limitations of the claim:

the communication control information includes *at least one* of a predictive time required for returning from the power saving mode to the normal mode (e.g. Fig. 5(c) – predicted warm-up time), **a storing amount of the storing portion for storing the received data, the maximum data payload received from the external of the printing system, and a reply rate of the ACK response and the NAK response to the external of the printing system.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato

as applied to claims 1 and 9 above, and further in view of Yoshida et al. (US 6636327) hereafter

as Yoshida.

Regarding claims 2 and 14, which depend from claims 1 and 9, while Nakazato teaches

connecting the printer to an upper system (host 10) via a bidirectional interface 7 (Fig. 1) and a

command analyzing section 22 that analyzes incoming commands to see how to process them

from the upper system 10, Nakazato does not specifically teach that the bidirectional interface is

a **serial bus** or that the command analyzing section **decides whether or not information is**

directed to own system, by referring an address area in a packet, and responds to only the

information addressed to own system.

Yoshida teaches connecting apparatuses in a printing system (Fig. 1) that are connected

via a **serial bus** for the transmitting of data bidirectionally (between C and H for example).

Yoshida further teaches that along the serial bus, packets are transferred that include address

information so that the receiving device can check whether the packet is for it or not in order to

respond to it or not (see Fig. 9, packet shown with destination ID).

It would have been obvious to use a serial bus for the bidirectional interface of Nakazato

that uses packets to send data. The motivation for doing so would have been to provide a high

speed communication for possibly multiple devices where the devices know where and how to

respond to the commands over the network (see col. 4 lines 42-50 and col. 2 lines 1-10 of

Yoshida for explanation of the benefits of using the taught serial bus).

8.   Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato

as applied to claims 1 and 9 above, and further in view of Yamanaka (US 6268925).

        Regarding claims 3 and 15, which depend from claims 1 and 9, while Nakazato teaches a

bidirectional interface 7 (Fig. 1) that connects the printing device to the upper system (host

device 10) and that **said deciding portion decides a mode shift by detecting change of an**

input control signal (deciding portion must receive warm up [mode shift] command from the

host system 10 via the interface 7 in order to initiate warm up of the printer engine 30), Nakazato

does not specifically teach that the bidirectional interface 7 is a parallel bus.

        Yamanaka teaches connecting a host machine (upper system) with a printer via a **parallel**

bus (Fig. 2, bus 80).

        It would have been obvious to one of ordinary skill in the art that the parallel interface

could be used in the system of Nakazato because it is a bidirectional interface for connecting a

printer to a host. The motivation for connecting a parallel bus in the system would be for fast

communication, which in general is faster than serial communication because multiple lines

carry data instead of just one.

9.   Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato

in view of Gringeri et al. (US 6233226) hereafter as Gringeri.

        Regarding claim 4, Nakazato teaches **a printing system** (Fig. 1) **comprising:**

a printing portion (Fig. 1, printer engine 30),

a controlling portion for controlling said printing portion (Fig. 1 printer controlling

section 27),

a power saving mode (Fig. 6 shows printer states, including power saving state) **for**

stopping a supply of a power source to at least said controlling portion (col. 9 lines 13-19

teach that all of the functions of printer controlling section 20 and printer engine 30 are disabled

[which includes printer controlling section 27] except logic functions for receiving commands

[ref. no. 22]),

storing portion for storing received data (Fig. 1 memory 26 stores data for printing);

deciding a receiving speed (Fig. 2, step S7-S10, wherein the planning of when and how

to send the data is set in order to get the data to the printer at the time when it has warmed up,

thus the receiving speed is at decided to be zero because the host system is generating the data

during warm up and sends to printer when done generating) **based on a returning time from**

the power saving mode to a normal mode (printer warm-up time calculating section

determines a returning time to the idle [normal] state);

receiving portion for receiving data in a shift from the power saving mode to the

normal mode to store the data in said storing portion (command analyzing section receives

the image data from the system, wherein data is spooled from the host computer 10 to the printer

during a warm up period [Fig. 2 S10] after the warm-up command has been sent [Fig. 2 S7]).

While Nakazato teaches transmitting the data to the printer controlling section 20 via a

bidirectional interface 7, Nakazato does not specifically teach deciding a receiving speed to send

the data at based on the capacity of printer memory or the returning time.

Gringeri teaches a system for transferring data between devices connected in via

bidirectional interfaces (Fig. 1) that includes determining transmission speed based on capacity

of the receiver memory buffer (Fig. 5 S.32, col. 17 line 66 – col. 18 line 8, wherein data

transmission rates between devices on a network are determined by the capacity of the receive

buffer).

It would have been obvious to control the transmission of data in the system of Nakazato

with the transmission rate determination of Gringeri. The motivation for doing so would have

been to prevent memory errors from receiving data too fast causing overflows at the receiving

device (printer). Thus, the combination meets the limitation of **at least one of the receiving**

speed, a maximum data payload and a reply rate to the received data received from a

computer host because at least one is taught in the combination.

Regarding claim 5, which depends from claim 4, Gringeri further teaches **deciding**

portion decides dynamically the receiving speed in view of a residual capacity of said

storing portion (the transmission rate is determined dynamically for each frame [see S.40 of

Fig. 5] based on the buffer free [residual] capacity).

10.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato and

Gringeri as applied to claim 4 above, and further in view of Yoshida.

Regarding claim 6, which depends from claim 4, while the combination teaches

connecting the printer to an upper system (Nakazato, host 10) via a bidirectional interface 7 (Fig.

1) and a command analyzing section 22 that analyzes incoming commands to see how to process

them from the upper system 10, the combination does not specifically teach that the bidirectional

interface is a **serial bus** or that the command analyzing section **decides the receiving speed based on setting of a data payload in a packet in receiving serial data from the upper system.**

Yoshida teaches connecting apparatuses in a printing system (Fig. 1) that are connected via a **serial bus** for the transmitting of data bidirectionally (between C and H for example). Yoshida further teaches that along the serial bus, packets are transferred that include payload information in order for the system to determine how much data is being sent in the transmission (see Fig. 9, packet shown data length).

It would have been obvious to use a serial bus for the bidirectional interface of Nakazato that uses packets to send data including payload information. The motivation for doing so would have been to provide a high speed communication for possibly multiple devices where the devices know where and how to respond to the commands over the network (see col. 4 lines 42-50 and col. 2 lines 1-10 of Yoshida for explanation of the benefits of using the taught serial bus). Further, the motivation for using payload information is stated above, thus being that the system knows how much data is being sent between systems and can accommodate the transfer based on transmission size information.

Regarding claim 7, which depends from claim 4, using the serial bus and packets of Yoshida as obvious above would also include **deciding portion decides the receiving speed based on a rate of notices** (the rate of signals that are sent back informing of unsuccessfully sent packets is necessarily a factor in determining receiving speed because if the sending device must resend many packets, the receiving speed of the job is altered to accommodated for the resending of packets) **informing that reception is normally completed** (Fig. 8 shows the acknowledge

signal that is sent back when the packet has been transmission; col. 9 lines 11-15 further shown

in Fig. 12), **and notices informing that the reception is not normally completed** (if there is a

CRC error, the acknowledgement would include an unsuccessful sending; col. 9 lines 16-22), **in**

replying a receiving response to the upper system (the acknowledge response is sent back to

the sender, thus the host system of Nakazato).

11.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazato and

Gringeri as applied to claim 4 above, and further in view of Yamanaka.

Regarding claim 8, which depends from claim 4, while the combination teaches a

bidirectional interface 7 (Nakazato, Fig. 1) that connects the printing device to the upper system

(host device 10) and that **said deciding portion decides a mode shift by detecting change of**

an input control signal (deciding portion must receive warm up [mode shift] command from the

host system 10 via the interface 7 in order to initiate warm up of the printer engine 30), the

combination does not specifically teach that the bidirectional interface 7 is a parallel bus.

Yamanaka teaches connecting a host machine (upper system) with a printer via a **parallel**

bus (Fig. 2, bus 80).

It would have been obvious to one of ordinary skill in the art that the parallel interface

could be used in the system of Nakazato and Gringeri because it is a bidirectional interface for

connecting a printer to a host. The motivation for connecting a parallel bus in the system would

be for fast communication, which in general is faster than serial communication because multiple

lines carry data instead of just one.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lucas Divine whose telephone number is 571-272-7432. The

examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Moore can be reached on 571-272-7437. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucas Divine
Examiner
Art Unit 2624

ljd

KING Y. POON
PRIMARY EXAMINER